

# VIRGINIA WILDLIFE

JULY 2003

TWO DOLLARS







# Director's Column

William L. Woodfin, Jr



Here at the Department we continually receive inquiries from hunters, anglers and other outdoor enthusiasts about where they can go to enjoy the outdoors. Most of you probably recall that just a couple of years ago the Department acquired the Big Survey Wildlife Management Area (WMA). This was the first major purchase of land by the Department of Game and Inland Fisheries in more than 20 years, and it came about because a number of individuals and organizations worked together to make this newest WMA a reality. Those efforts guaranteed the conservation of about 8,000 acres of relatively untouched land in Southwest Virginia.

Since the Big Survey purchase, we have continued our efforts to provide access to lands for wildlife-related recreation. While in some cases those efforts appear small, the impact is very substantial. For example, this past year, through the generous gifts of others, VDGF has acquired almost 1,200 acres of important wetlands, marshlands and other valuable wildlife habitat.

In May of this year, the Virginia Department of Transportation presented our Board of Game and Inland Fisheries with the deed to 758 acres of wetlands adjacent to the Great Dismal Swamp National Wildlife Refuge. This recent addition to our WMA lands offers exceptional habitat for black bears, waterfowl and other game species, along with being an important site for migratory birds. Several rare and endangered species reside on the property making the donation even more significant.

Donations made within the last year by individuals like Mr. Jack Shoosmith, a member of the Board of Game and Inland Fisheries, and by organizations like the Wildlife Foundation of Virginia, have enabled the Department to conserve crucial wetlands on the Eastern Shore next to the Saxis WMA and along the Appomattox and James rivers near Hopewell. Wetlands are vital to wildlife and to the environment. They provide essential breeding and nest-

ing habitat, and help to improve water quality throughout the Commonwealth by acting as natural filters.

Donations by individuals and organizations are extremely important. And another significant source for acquiring land is grant money. Also within the last year, Department staff worked hard to acquire funding through the North American Wetlands Conservation Act Grant. By partnering with the City of Virginia Beach, Ducks Unlimited, the U.S. Fish and Wildlife Service, and the American Forests Global Re-leaf Center, the Department was able to qualify for a grant to purchase land adjacent to the Whitehurst Tract of the Princess Anne WMA on Back Bay. This property will substantially increase the Department's wetlands in suburban and urban areas, and will preserve valuable habitat in one of the fastest developing regions in Virginia. These efforts by the Department will help to ensure that these open spaces will retain their natural settings.

Protecting these natural, undeveloped areas becomes even more challenging when funding is limited. Frankly, it would have been difficult, if not impossible, to have accomplished any of these acquisitions without the help from numerous individuals and organizations. Even though state government continues to have some budgetary issues that touch each and every one of us, we are continuing our work to move forward in providing opportunities for all to enjoy public access. That's a major part of our Department's mission statement and we are both pleased and proud to make these valuable sites available to you. We just hope you enjoy taking advantage of our wildlife resource experiences as much as we enjoy providing them for you.

## Mission Statement

To manage Virginia's wildlife and inland fish to maintain optimum populations of all species to serve the needs of the Commonwealth; to provide opportunity for all to enjoy wildlife, inland fish, boating and related outdoor recreation; to promote safety for persons and property in connection with boating, hunting and fishing.

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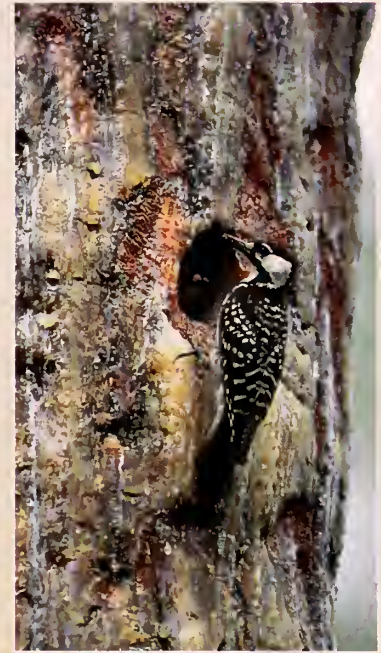


About the cover: Photo ©Lynda Richardson

Freshwater mussels are an important part of the aquatic world that is found within the streams and rivers of Virginia. Their ability to filter small particles, bacteria and algae make them one of the few animals that actually improve water quality.

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*Dedicated to the Conservation of Virginia's Wildlife and Natural Resources*



# Speckle Fever

story and photos by Marc N. McGlade

*Crappie fishing in Virginia is very good from east to west, and north to south. Here's a look at one of freshwater's tastiest species.*

If you're as sad as a hound dog's eye about your fish-catching success this year, perhaps a crappie-fishing venture to one of several Virginia locations serving up chunky slabs would ease the pain. Crappies can turn an otherwise uneventful fishing day into a memory that will last and stay imprinted in your noggin. These fine-tasting specimens are truly an angler's delight, and the Commonwealth has many quality fisheries from which to choose. Crappies have beautiful colors and features, making them easy on the eyes for those who target these prolific fish.

Of all the so-called "panfish," crappies are arguably the most popular. They can put a bend in a kid's fishing rod, as well as a grin, or tug on a dangling minnow presented by a longtime angler employing a cane pole. Today, many crappie masters use lightweight or ultralight gear and trick them with an assortment of artificial lures. Flycasters, too, can have their way with the tasty species.

Crappies are very much a schooling-type fish. This bodes well for an-

glers who pursue them. Once you find one, there is a good chance you found the mother lode.

Not only are they the most popular panfish, but they also have the most nicknames. One such Southern sobriquet is speckle. Folks from the North refer to them as papermouths. Other names include speckled perch, calico bass, silver perch and freckles. Pronunciations of crappie vary, too: (krap'e) or (krop'e), depending on where the speaker hails.

Regardless of its nickname, jumbo-size crappies earn a name with distinction—slabs. Well, in the Old Dominion, we have quite a few slabs roaming our waterways!

## It's Just Plain Black and White

There are two species of crappie: white crappie (*Pomoxis annularis*) and black crappie (*Pomoxis nigromaculatus*).

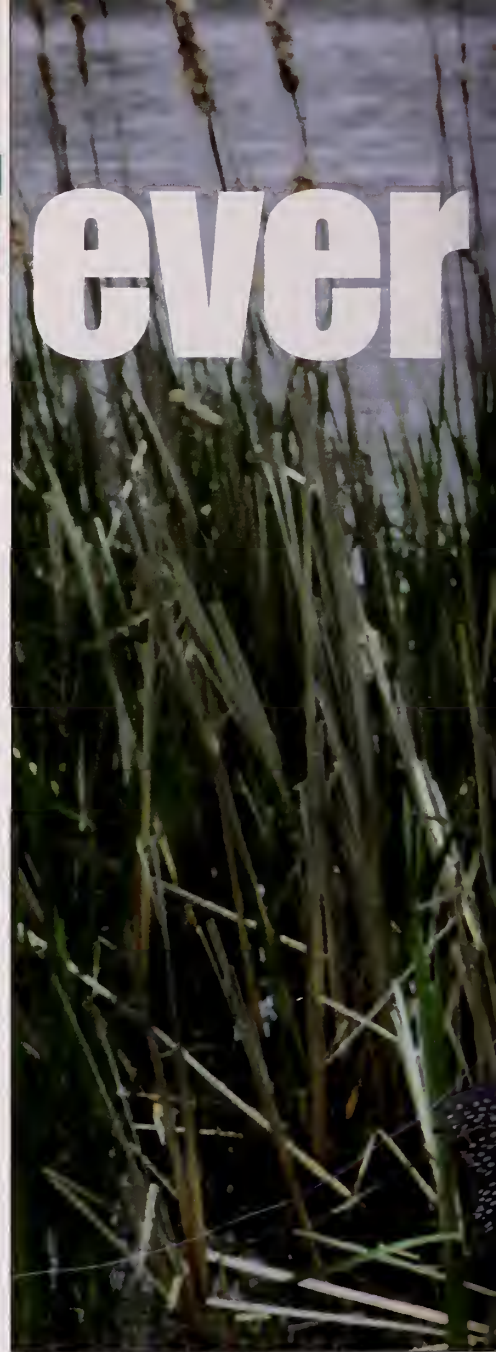
"The eating habits of these species are similar," said Mukhtar Farooqi, a fisheries biologist with the Virginia Department of Game and Inland

Fisheries. "Young individuals will eat zooplankton, insects and larval fish."

Adults, he said, will eat fish, insects and other organisms.

"White crappies probably rely on suspended zooplankton more than black crappies do," Farooqi said. "In this feeding mode, however, both species can be found suspended in the water column and aligned with zooplankton concentrations."

While working on a striped bass and forage fish study, Farooqi made a rudimentary examination of the stomach contents of 20 black crap-







Crappie expert Charles Wallace, from Crewe, admires a fine crappie taken from a small pond. There are hundreds of ponds and lakes around Virginia that offer excellent crappie fishing.

pies, ranging from 10 to 14 inches long, sampled from Little Creek Reservoir in Toano. The biologist found five had eaten blueback herring (about 3 inches long), five had unidentifiable fish remains, six had unidentifiable matter, and four had empty bellies.

Both species relish in ponds, lakes, streams and rivers and nor-

mally associate with structure such as fallen trees, beaver huts, brush piles or vegetation. Biologists indicate the black crappie is more tolerant of acidic waters than white crappie and there is some evidence to suggest that the white crappie is more tolerant of turbid waters. White crappies flourish mostly in the South, whereas black crappies are more widespread.

Both species are members of the sunfish family. The black crappie is generally darker than its counterpart, with spots or blotches covering most of its body. Black crappies usu-

ally have seven, but can have up to eight dorsal spines. White crappies are paler in comparison to black crappies and usually have vertical "bars" that are comprised of spots. These bars are quite noticeable on their silvery sides; made up of pearlescent, iridescent blue, and lavender. White crappies generally have six dorsal spines but can sometimes have only five. Both species have protruding lower jaws, and their dorsal and anal fins are the same shape. Let it be said that color is not a good key to identifying or distinguishing these two species,



since different bodies of water can produce color variations and, during the spawn, both species can appear extremely dark.

## Through the Lens of a Crappie Master's Eye

Crappie guru Charles Wallace licks his chops when people mention crappie fishing. This slab specialist favors Buggs Island Lake, for its in-

"It's outstanding from March through October. To have an excellent population of both quantity and quality crappies makes us very fortunate," DiCenzo said.

Wallace knows all about quantity and quality when it comes to speckles. He has landed jumbo Buggs Island slabs up to 3 pounds, 3 ounces. What is truly impressive is the number of 2-pound or better fish that Wallace and his partners have

"My friend Shorty Osborn and I were taking some anglers fishing a few years ago and between the two of us, our best eight fish weighed 22 pounds, 5 ounces," Wallace said.

That sounds like a respectable sack of largemouth bass, let alone crappies! Although that astonishing catch was from a private lake, it serves as notice that Wallace knows his stuff about crappies. He consistently catches slabs from Buggs Is-



credible population of crappies.

Wallace, from Crewe, Va., said, "Buggs is definitely the best lake in the state for crappies, both for numbers and size."

Vic DiCenzo, a fisheries biologist with the Department, agrees. He added that Buggs Island is one of the best crappie destinations east of the Mississippi.

caught from Buggs. Together, they have boated 28 crappies exceeding 2 pounds in just the last five years. Additionally, they caught 55 between 14 and 15 inches in length—a bruiser by anyone's standards. Personally, Wallace has 12 crappies over 3 pounds to his credit, and one particular day he had a catch many of us can only dream about.

Using light fishing tackle and small curly-tailed grubs or minnow imitations, a patient angler can locate schooling crappies by slow trolling, jigging or casting for them. Below: Black crappie (*Pomoxis nigromaculatus*).

land, Briery Creek Lake and other locales across Virginia. Wallace's largest crappie to date weighed 3 pounds, 11 ounces.

The soft-spoken Southerner likes to troll, or "pull," as he describes it. This method allows him to cover expansive water, particularly brush piles or structure. He firmly believes big fish eat first in brush piles or other types of cover. If he's consistently catching small fish, he'll relocate based on his experience that the biggest fish will usually be the first or second to make it to the landing net.



illustration by Duane Raver



"My favorite technique is trolling, or pulling, a 1/48- or 1/32-ounce marabou or tinsel-type painted lead-head jig body tipped with a small minnow, regardless of the time of year," Wallace said.

With such a light jighead, it can be difficult to fish deep water, where crappies often lurk. Wallace remedies that by mashing a No. 7 split shot onto the line about 18 inches above the jighead for added weight.



Wallace's crappie boat is decked-out to accommodate his trolling technique and casting. He trolls with three crappie rods mounted in rod holders on the side of the boat. Two of the rods are 10-footers and one measures 8 feet long.

"I troll with the 10-footers on the ends and the 8-footer in the middle holder," he said. "My electronics and boat control are the most important tools for me to locate the structure and the crappie," he added. "After you find schools of crappie, you must maintain boat control. It's very important."

When Wallace trolls, he uses the slowest speed on the trolling motor.

"That's why I changed to a variable-speed trolling motor because the slowest speed on a 5-speed motor is too fast. I want the boat to barely

move, keeping the lines at a slight angle to the water. That keeps your bait at the proper depth if the lines are almost straight down," he acknowledged.

When casting to crappies, Wallace likes 1/8- and 1/16-ounce white, curly-tailed grubs. He prefers fishing them in brush piles on sloping banks. If the white grub isn't fooling them, he'll try chartreuse and black tube jigs.



A good selection of artificial lures in a variety of colors and a supply of hooks, bobbers, split shot and small to medium size minnows is all it takes for catching both white and black crappie. Below: White crappie (*Pomoxis annularis*).

To give jigs a different look, he'll sometimes tweak them. This might be as simple as adding a bit of marabou feathers to give the lure some added color. His favorite color jigheads are orange, chartreuse, green or white.

"If I find a school of suspended crappies, however, I will use a slip-cork with minnows even though it's more likely to get hung up in brush," Wallace said. "But mostly, I just tip my jigheads with small-sized minnows."

Because crappies are drawn to brush and woody debris like hellgrammites to a riverside campfire, it can weigh on your last nerve when it comes to snagging hooks. Wallace solved that problem by designing his own jigheads. He ties them at home, and they are virtually weedless, or in the case of crappie fishing, they're brushless!

Crappie gear doesn't have to be fancy. For starters, crappies cooperate for the bank angler, wader and boater. Ultralight or light spinning and spin-casting equipment works perfectly. A long cane pole will do the trick for anglers using minnows for live bait, along with a stash of little bobbers, small split shot, Aberdeen-style hooks or even tiny circle hooks. Best live baits are small or medium minnows. Fly anglers can score with popping bugs and streamers. Other good artificial lures include small crankbaits that imitate minnows, small jigging spoons, hairpin-style lures and, of course, the standard marabou crappie jig.







Beaver huts, brush piles, blow-downs or other woody debris are crappie magnets. This beaver hut was photographed during the summer drought of 2001, at Buggs Island Lake. Smart anglers will visit spots like these when water covers them.

Opposite page: Charles Wallace proudly displays two "slab" crappies before releasing them. Remember take only what you need for a good meal and put the rest back for another day.

## Habitat, Food and Activity

Crappie habitat is diverse, represented by rivers and streams of the Coastal Plain, millponds, swamps, tidal creeks, small lakes, large impoundments and farm ponds. Although crappies are best known for their desire to hang around woody structure, they also gravitate towards bridges and aquatic vegetation.

Their favorite appetizer du jour is a minnow, but other small fish will suffice in a pinch. Crappies will also dine upon insects, nymphs and crustaceans.

Fisheries biologists say crappies begin congregating in late February off the shallows of their spawning grounds. In March and April, they

seek out gravel or sandy bottoms close to or amid sunken logs, stumps, underwater brush, or other protective structure. In water depths from 2 to 15 feet, they fan out saucer-shaped nests. After the females spawn, they leave the males in charge to briefly guard the eggs until hatching.

Crappies are easiest to catch during the spring, but don't overlook summer and fall. Wintertime can be a tough nut to crack when fishing for them.

## Seeking Slabs

The Commonwealth's state-record crappie is a 4-pound, 10-ounce slab, caught from a private pond back in 1994. Crappies this size are impressive indeed, and Virginia is an excellent place to call home if fishing for speckles runs deep in your veins. For you history buffs, the all-tackle record is a 6-pound monster, taken from Westwego Canal in Louisiana in 1969. A true slab, this specimen must have resembled a trashcan lid.

Crappies can be had in virtually any body of water across our broad state. Farm ponds—evidenced by the current state record—can harbor exceptionally large specimens and good numbers, too. Some of the Commonwealth's best crappie lakes

include Buggs Island, Chesdin, Cohoon, Anna, Smith Mountain, Prince, Little Creek, Gaston, Claytor, Brittle, Beaverdam Swamp, Occoquan, Manassas, Moomaw, Orange, Burke and South Holston. The top rivers in the state are: South Fork Shenandoah, Pamunkey, James and Chickahominy.

So there you have it. Get out there and catch yourself a mess of speckles. They are among the best-tasting fish in all of freshwater and can be found throughout the Old Dominion. □

*Marc McGlade is a frequent contributor to Virginia Wildlife who likes to target crappies, particularly in the springtime and summer. He's also a fishing instructor and lecturer, and resides in Midlothian, Va.*

## For More Information

- For more information regarding crappies in Virginia visit the Virginia Department of Game and Inland Fisheries' Web site at [www.dgif.state.va.us](http://www.dgif.state.va.us).
- To contact Charles Wallace, call (434) 645-1133.
- Crappie regulations: There is no minimum size for black or white crappie; with the exception in Flannagan and South Holston reservoirs, a 10-inch minimum is enforced. A creel limit of 25 per day in aggregate is applied to crappies, except in Lake Gaston, Buggs Island Lake and New River from the Virginia-North Carolina state line downstream to the confluence of the New and Little River in Grayson County, where there is no daily limit.
- Caught a slab? The minimum requirements for a trophy fish certificate from the Department are as follows: 15 inches in length or 2 pounds.
- North American Crappie Association – [www.northamerican-crappie.com](http://www.northamerican-crappie.com).







# Wild in the Woods

## When Wildlife Overs

by Carol A. Heiser  
illustrations by Spike Knuth

Nature lovers who ordinarily enjoy watching birds and other wildlife visit their yard are sometimes surprised—and perplexed—when they discover that certain animals can become quite a nuisance under the right conditions. This has certainly happened to my own family, which has been feeding birds and squirrels for years. My father would routinely leave peanuts on a table outside the dining room window as an invitation for squirrels, and us kids would sit right next to the glass to see their antics up close. Trouble is, the squirrels got so bold and accustomed to the energy rich snacks that they became disgruntled when we went away one weekend and didn't leave them any food behind. When we returned, we found that the squirrels had chewed away the entire corner of the window!

White-tailed deer have become a common sight within Virginia's suburban settings. Loss of habitat and a deer's endless need to eat has made living in harmony with them a real challenge.





# ays It's Welcome

There are plenty of wildlife species which might be considered "pesky critters" around the home, depending on your point of view. Labeling an animal a "nuisance" is usually a matter of perspective and is often relative to a given situation, like our peanuts-and-squirrels scenario. In many cases, the animals that tend to become a nuisance are opportunists: they take advantage of food and other resources that they happen to stumble upon. They're not "bad" animals, they're just able to adapt well to man-made environments in the urban and suburban landscape, and sometimes they get in our way.

What can you do when wildlife comes to call, and you weren't expecting company? Here are the facts you need to know about the top three species that people complain about the most.

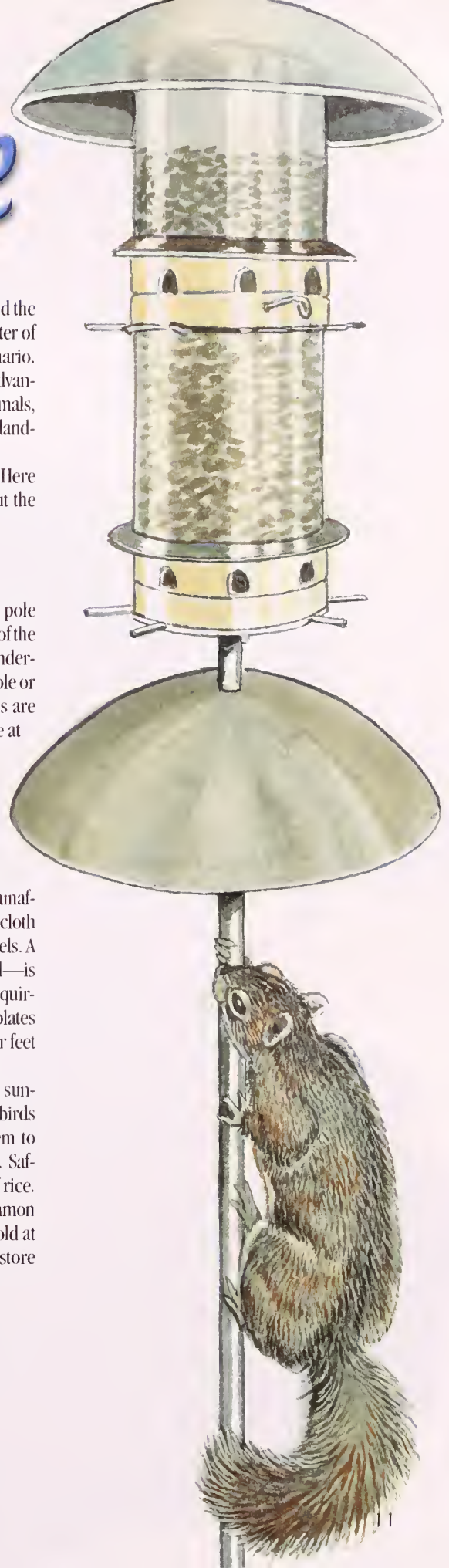
## Squirrels

The best way to keep squirrels off your bird feeders is to hang the feeders on a pole equipped with baffles. Use a large dome-shaped baffle placed above the feeders at the top of the pole, and a cone-shaped or cylindrical baffle made from sheet metal or PVC on the pole underneath the feeders. The baffles should make it more difficult for squirrels to climb up the pole or jump down onto the feeders from above (note the operative word "should"—squirrels are notoriously clever and can often outwit even the best designs!). The pole itself should be at least 10 feet away from trees, and the feeders must be at least 6 feet off the ground.

Another design that's been known to work is suspending a cable between two trees with the feeder in the middle, and then slide 2-liter soda bottles or other slippery cylinders over the cable on either side of the feeder to make it harder for the squirrel to get across. This assumes that the feeder is not directly beneath some convenient branches, of course. Some feeders have springs in the perches which enable the seed portal or hopper to close when depressed by a heavy squirrel but allow lighter-weight birds to feed unaffected. A feeder enclosed within a wire cage can also work: the plastic-coated hardware cloth or chicken wire has holes big enough to permit birds but small enough to exclude squirrels. A more sophisticated design—and apparently very successful—is a feeder equipped with an electrical shocking device. The squirrel receives a mild shock when its feet touch the electrical plates at top and bottom, but birds are not shocked because their feet can not make the same contacts.

If you're tired of squirrels gobbling up your income in sunflower seeds, try using only safflower seeds. The same birds you would ordinarily get with sunflower seeds also seem to enjoy the safflower when that is the only food available. Safflower is a white seed that looks like an oversized grain of rice. Chickadees, goldfinches, titmice, finches and other common backyard birds will partake of it. The seed might not be sold at your corner mammoth mart, but it's usually available at a store which specializes in bird feeders and bird paraphernalia.

If you enjoy feeding birds then you inevitably set the stage for attracting squirrels. Trying to rid your yard of these acrobatic wonders has become a million dollar business and one that has homeowners going nuts over.





As for squirrels in the attic, the easiest thing to do according to one game warden, is to turn on the attic light and put a radio in the room tuned to a continuous talk channel, not music. The constant light and voices day and night disturbs the squirrels to leave, and take their young with them. Do not close up the holes they were using to get in, however, if you suspect any young have been left behind: the adults will simply chew a new hole. Wait until the end of summer and before winter to make the repairs, when you're sure they're gone.

A second method, this one described by a biologist, is to fashion a piece of sheet metal into a funnel/cone shape. On one end is the funnel, whose opening is the same size as the hole in the woodwork. The funnel

extends out about 12 inches, and at the other end is a wide cone, about another 12 to 15 inches long. Attach the funnel end over the hole, making sure the metal is sealed around the edges. Keep an eye on this until you see the squirrels leave. Once they get out, they can not get back in through the cone end.

Finally, a "have-a-heart" trap may work, but only if you get the entire squirrel family and leave no young behind. Then be sure to fix the holes promptly, before other animals find their

way in. Landowners do not need a permit to deal with squirrel problems such as these on their own property.

## Deer

When it comes to deer, the question on everyone's mind invariably seems to be, "what can I plant that deer won't eat?" The general consensus among biologists is that if a deer is hungry enough, it will eat almost any plant, regardless of what kind of plant it is or what kind of repellent you put on it. Whether or not a deer browses a plant depends on many factors, such as palatability of the plant, health and condition of the deer, health and condition of the habitat, density of the deer population in a given geographical area, and so on.

In an often-cited study that was reported by Cornell University's Department of Natural Resources in fall 1992

("Resistance of Woody Ornamental Plants to Deer Damage"), the researchers found a handful of plants which appeared least likely to be browsed by deer. These included barberry, paper birch, common boxwood, American holly, drooping leucothoe and Japanese pieris. Presumably these





species would be the best choices in a landscape, but there are no guarantees. At the other end of the spectrum, the researchers found that plants like azaleas, apples, plums, arborvitae, yew and hybrid tea rose were highly favored by deer and tended to experience severe damage. Species like red cedar, white pine, deciduous azaleas and forsythia fell within the moderate damage range.

There have also been numerous scientific studies done over the years to measure the effectiveness of various chemical repellents and treatments that are intended to deter deer from sampling your favorite ornamentals. Some people report varying degrees of success using taste repellents, such as hot sauce from the kitchen. Commercial (chemical) repellents might contain similar ingredients, such as the capsaicin found in hot sauce or ammonium soaps. Deer repellents go by optimistic names like Deer Away or Hinder. Unfortunately, chemical repellents must be reapplied after each heavy rain, which makes purchasing the products on a regular basis rather expensive if you're trying to treat a large area. (As with any chemical on the market, always read the label carefully and apply only as directed.)

Other people have had some (temporary) success with odor repellents, such as bars of soap hung from plant limbs in the yard, or bars of soap cut into thumb-sized chunks that can be scattered in your flower beds. Human hair placed in mesh bags and hung 3 feet apart on trees may work but is not known to consistently repel deer.

Home recipes may or may not work, depending on who you talk to. The most interesting of these is one I heard about from a homeowner who says that it works for him: mix a half dozen eggs in 1 gallon of water; put the container in the sun for a week; pour it out in a watering can (hold your nose!); then sprinkle it on your plants. In fact, many of the commercial products sold in stores contain whole egg solids as the active ingredient.



There are a few other options besides repellents. Cover your plants with soft mesh or netting over the winter, for example, to protect the leaf tips from being browsed while still letting sunlight through. You might also consider getting a dog that will chase deer—and most likely anything else that enters the yard.

However, on the advice of our deer biologist, the only reliable way you can make your yard or garden absolutely deer-proof is to install a high-tensile, woven-wire fence that's at least 10 feet tall. An 8-foot fence of special woven fabric helps restrict deer movements but won't keep them out completely. A 6-foot fence is better than nothing, but it will obviously be easier

Before you take drastic steps to evict those pesky squirrels from your feeders, raccoons from your rafters, or confront the bats in your belfry, you might want to read and learn as much as you can about your friend or foe. Learning to humanly outwit and to live with wildlife critters that overstay their welcome may be the best part of being a nature lover.

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for deer to jump. A single strand, electric fence baited with peanut butter is often effective: deer are attracted to the peanut butter, receive a mild shock and are frightened away.

## Woodpeckers

If your peaceful morning slumber is shattered by the noise of a woodpecker pounding on your house, there are three possible reasons this might be happening. First, woodpeckers are predominantly insect eaters and are attracted to the wood of dead trees in search of food. Second, woodpeckers make holes in dead trees to build their nests. Third, male woodpeckers try to attract a mate or defend their territory by "drumming" on hollow surfaces such as trees or logs which will carry the sound near and far.

Check your home carefully for evidence of insect presence or damage: carpenter bees, carpenter ants or termites might be ringing the dinner bell for these birds. You may need to treat your home with an insecticide, caulk tunnels, or paint with an exterior latex before repairing woodpecker damage.

If you're sure that insects are not the problem, the best method for discouraging woodpeckers is to install a 1/2-inch mesh, lightweight plastic or nylon netting over the wood-siding beneath the eaves, as soon as damage is apparent. Attach the net with wooden dowels and hooks, angling the net back from the edge of the eave to the siding. Make sure there is at least a 3-inch gap between the wall and the netting to keep the bird from pecking through the mesh. The net must also be secure enough that the bird can not get behind it.

Another way to provide protection is with a metal barrier such as aluminum flashing or metal sheathing. The sheathing can be painted with simulated wood grain for camouflage with the siding. Also, 1/2-inch hardware cloth can be attached directly to the siding or on one-inch spacers to make a gap in between. Spray paint the wire to match the siding.

Occasionally, scare tactics with moving or reflective objects may frighten the birds away, such as reflective mylar tape, strips of aluminum foil, or bright pie pans hung from the eaves. Repeated loud noises may be helpful, as from banging on a garbage can lid. It has been reported that fake owls or snakes are generally ineffective in discouraging woodpeckers.

Because woodpeckers are protected under the federal Migratory Bird Treaty Act, killing or otherwise harming the birds is illegal without a special permit.

## Some General Do's and Don'ts

The best method of protection is prevention. Use the guidelines below to discourage raccoons, skunks, and other furry beasts from frequenting your yard or home.

### DON'T:

- throw kitchen scraps or old bread out in the yard; these items attract starlings, crows and other animals
- feed mammals; avoid putting out apples, corn, etc. that might be attractive to squirrel, deer, raccoon, opossum, etc.
- leave dog food or cat food outside
- feed geese or ducks around ponds

### DO:

- use wire, weights or clamps to tighten trash can lids
- keep outdoor grills clean and free from food, or store in garage
- take your bird feeder down in the summertime to avoid bear problems, if you live in an area with bear
- avoid over-mulching around the foundation of your home
- store firewood piles or yard debris like sticks and leaves away from the house or garage
- keep the compost pile well away from buildings and turn it frequently
- place bat boxes or bird boxes on poles or trees, not directly on your house
- inspect around your home yearly for any holes or crevices that might provide entranceways for mice, bats, snakes, etc., such as under the eaves, around the soffits and window frames, under the panels of siding, around the exterior doorways
- cover the chimney, septic vent pipes and exhaust fan outlets with a hardware wire "cap" or other tightly fitting exclusion device
- seal off all foundation openings with wire mesh, sheet metal or concrete
- install a fence or mesh barrier around the base of a porch or deck if it is open underneath
- maintain a healthy lawn and treat for grubs that might attract moles, skunks and other wildlife

## Who Ya Gonna Call?

Contrary to popular opinion, the Virginia Department of Game and Inland Fisheries is not in the business of removing unwanted wildlife

from people's homes or properties. Also, most of the county Animal Control agencies do not offer assistance with wildlife matters either. Instead, they typically focus their efforts on domestic pet problems (although you might double-check to be sure). If you want to trap or remove wildlife from around your home, you must rely on other local resources, volunteers or private businesses to assist you. Look in the yellow pages under "Pest Control Services." If you intend to kill an unwanted animal yourself, always call your county game warden first to be sure you will be in compliance with state and local laws. The game warden can usually be reached through the county sheriff's office.

If the problem is widespread and involves a large concentration of wildlife or a potential hazard to public health—such as where there are too many geese on a town reservoir, for example, or where a farmer is experiencing serious crop damage—the landowner can contact the Wildlife Services office of the U. S. Department of Agriculture's Animal and Plant Health Inspection Service (USDA-APHIS). Their Virginia Wildlife Services office can be reached at (804) 739-7739 in Moseley, VA (or visit the agency Web site at [www.aphis.usda.gov/ws/](http://www.aphis.usda.gov/ws/)).

## Learning More...

*Squirrel Wars: Backyard Wildlife Battles and How to Win Them*, by George H. Harrison (c. 2000 Willow Creek Press, Minocqua, Wisconsin), 176 pp..

*Managing White-Tailed Deer in Suburban Environments*, 52 pp. and *Managing Canada Geese in Urban Environments*, 42 pp.—both booklets published by Cornell Cooperative Extension; available through their Web site ([www.cce.cornell.edu/publications/catalog.html](http://www.cce.cornell.edu/publications/catalog.html)), or call (607) 255-2080.

The Berryman Institute for Wildlife Damage Management ([www.berrymaninstitute.org](http://www.berrymaninstitute.org)) — contains excellent links to many related sites.

NC State University, Wildlife Extension Service ([www.ces.ncsu.edu/nreos/wild/wildlife](http://www.ces.ncsu.edu/nreos/wild/wildlife)) — click on "Wildlife Damage Control" to get to a page filled with over 40 fact sheets in pdf-format that were scanned from the University of Nebraska's manual, Prevention and Control of Wildlife Damage.

*Carol A. Heiser is a Wildlife Habitat Education Coordinator with the Virginia Department of Game and Inland Fisheries.*





# Regaining Our Freshwater Mussel Heritage



## Biologists with the Virginia Department of Game and Inland Fisheries embark on a unique recovery program to reverse the decline of freshwater mussels in southwestern Virginia.

by Michael J. Pinder

**P**eering through the microscope, Virginia Department of Game and Inland Fisheries biologist assistant Joe Ferraro examines half-dozen larval freshwater mussels. Known as glochidia by biologists, each glochidium when magnified 200x can appear as a pair of castanets. When a salt grain is added to the sample, the glochidia, like little mousetraps, snap shut in rapid succession. Joe turns, and giving a look of eager anticipation remarks, "They're ready." Thus with such a seemingly small step begins the sizeable task of recovering Virginia's freshwater mussels.

Around the world, mussels live in a variety of freshwater habitats but are most prevalent in streams and

ivers. Similar to their marine clam and oyster cousins, freshwater mussels are bivalves and have two shells connected by a hinge-like ligament. Mussels vary in their adult sizes from species as small as a thumbnail to others as big as a pie plate. The wide variety of shapes and colors are reflected in species like purple

Dr. Richard Neves (right) and Steven Sklarew examine freshwater mussels collected from the Clinch River. Dr. Neves and his students at Virginia Tech have conducted research over the last 25 years to restore the unique species in the upper Tennessee River drainage of Virginia. Previous page: Biologists are using a new and innovative program of cultivating freshwater mussels to help increase their numbers and chances of survival.



Emily Pels

Michael J. Pinder



wartyback, pink heelsplitter, and three ridge just to name a few. On the stream bottom, mussels are often only noticeable by their two small siphons, which are used to draw and expel water. When quickly dislodged, a large muscular foot that is used to move amongst the stream gravel and pebble can be readily seen.

The life cycle of a freshwater mussel is one of the most complex and interesting in the animal world. Unlike other animals that can actively search for a mate, the sedentary mussel depends on the river current to reproduce. The process begins with the male releasing sperm, and the female located downstream, drawing it in through her incurrent siphon. Numbering in the 100s to 1000s the fertilized eggs develop into glochidia within her gills. Once mature, they are released into the water column to begin the second part of their lives—attaching to the gills, fins or scales of freshwater fishes. At this point, the process is further complicated because not only do glochidia have to find a fish, but it has to be one of several fish species for the life cycle to continue. If by chance a glochidium attaches to the correct fish species, it encysts into the fish's tissues and undergoes a short life as a parasite. Over several weeks, it begins to develop gills, a foot, and other internal structures to become a juvenile mussel. The now fully transformed, but still microscopic juvenile will drop off the fish and begin its life on the stream bottom. Unbeknownst to the fish, it has just served as a taxi transporting the young mussel into new habitat far away from its parent. If the mussel is lucky enough to grow into an adult, it may live 50-100 years or more depending on the species.

Freshwater mussels are an essential component of our rivers and streams. By their siphoning actions, mussels filter bacteria, algae and other small particles,

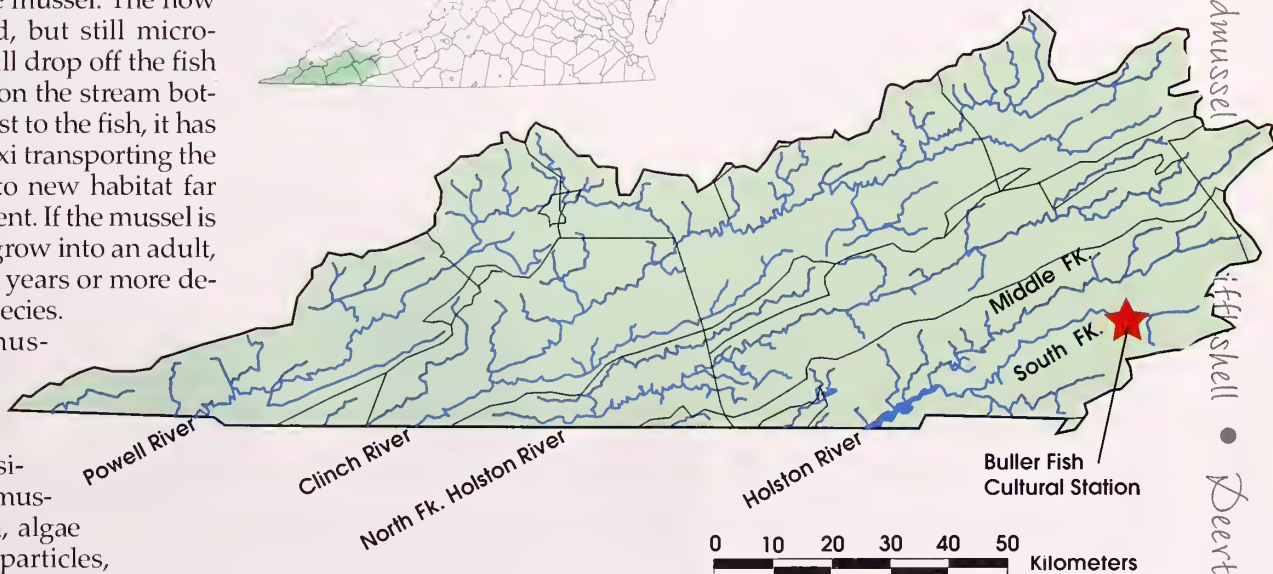
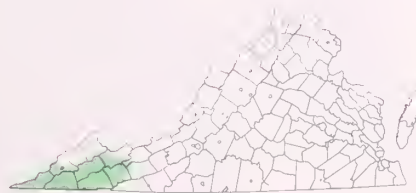


Michael J. Pinder

which make them one of the few animals that improve water quality. Mussels also serve as a food source to many species of fish, reptiles, birds and mammals. Walking along the riverbank, piles of empty mussel shells called middens are clear evidence of a muskrat. The muskrat, using its hand-like paws, holds the mussel and carefully inserts its incisors between the shells. After the

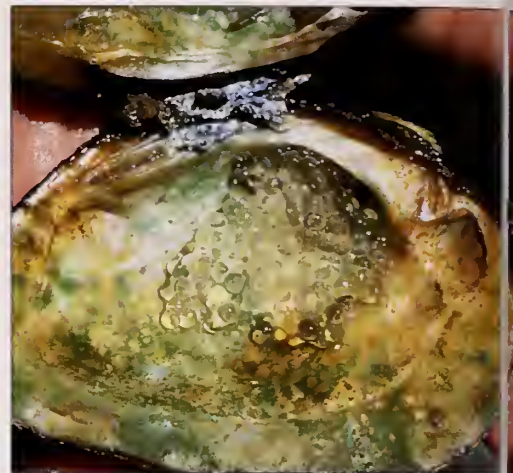
Department biologist assistant Joe Ferraro begins the process of mussel cultivation by examining larval mussels, known as glochidia, under the microscope.

Below: The Powell, Clinch, and tributaries (North, Middle, and South Forks) of the Holston River comprise the upper Tennessee drainage of Virginia. This drainage contains some of the highest mussel diversity in the U.S.



de pearlymussel • Eastern pondmussel • riff shell • Deertoe





mussel is opened and eaten, the shell is discarded into a pile with others from previous meals. In addition to functioning as a food source, mussels serve as habitat for many organisms. The outer shell of a live mussel is usually covered by aquatic insects, algae and plants. Even when the mussel is dead, the empty shell functions as an egg laying site for fish like madtoms and darters.

People have a long history of benefiting from mussels. Native Americans used mussels as a ready food source, implements for tools, and as jewelry. Before the advent of plastics in the 1930s, most buttons were made from freshwater mussels. Modern day buttons retain the luster of those found from earlier times. Today, freshwater mussels are a key ingredient in the pearl industry. Mussels are collected in several areas of the United States and sold to Asian markets. In the pearl farms of China and Tahiti, these shells are cut and shaped into round pearl replicas and placed into marine oysters. The oysters proceed to coat the mussel shell with a thin mother-of-pearl layer. Once removed from the oysters in approximately two years, they are sold to U.S. customers as cultured pearls. Besides their commercial use, biologists recognize their value as indicators of water quality. Since mussels spend their entire lives in the water, they are a useful tool in gauging the long-term health of our rivers and streams. A person can be assured that a river

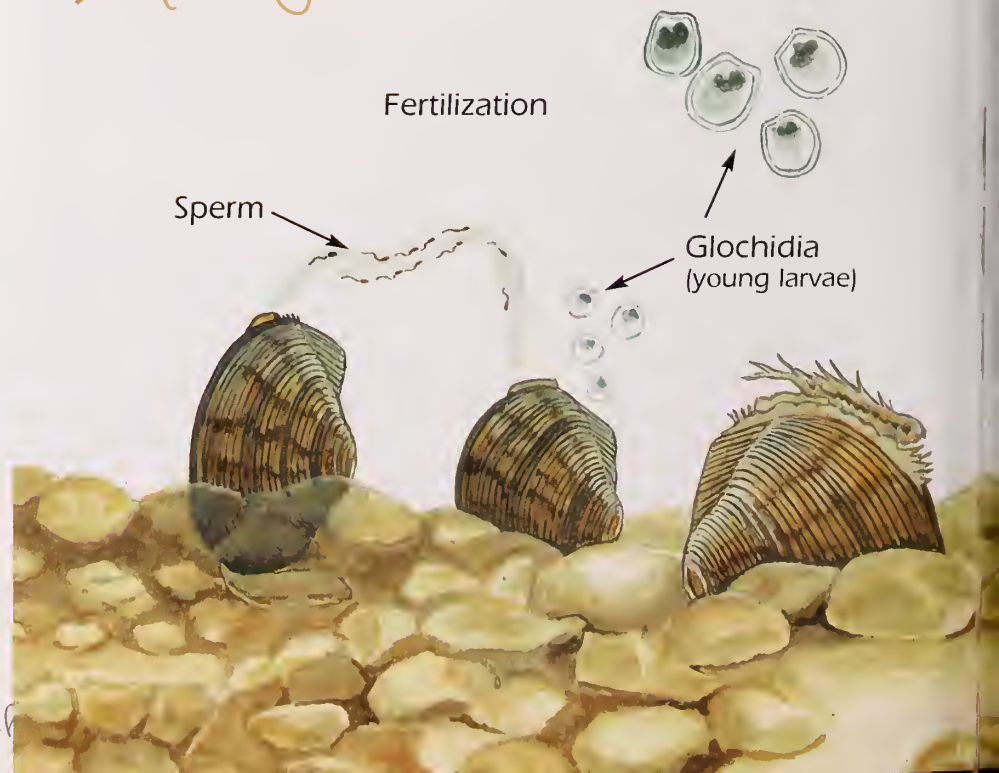
containing an abundant and diverse mussel fauna has good water quality and is a safe area to fish, swim and enjoy.

The diversity of freshwater mussels in the United States is unmatched by any other place on Earth. Of the estimated 1,000 species worldwide, the U.S. historically contained 297, about one-third of the total world's fauna. In comparison to other countries and continents like Africa with 96 species, China with 60 species, and Europe with a paltry 12

Left to right: The mussel serves as an attachment area for aquatic plants and insects. Here a mussel, covered in aquatic vegetation, is only noticeable by a small slit on the river bottom. Even when dead, the remaining mussel shells serve as habitat for fish that use them for shelter and egg laying sites. Photos by Michael Pinder.

Below: Life cycle of a mussel (left to right). Sperm released by the male fertilizes the eggs of a female mussel. Young develop into larval mussels, called glochidia, in the gills of the female. Microscopic glochidia are released into the water and attach to the gills of a suitable host fish. Glochidia encyst into gill tissues and develop into juvenile mussels. After several weeks, mussels drop off the fish and begin life on the stream bottom. Illustration by Spike Knuth.

## Mussel Life Cycle





species, the wealth of the U.S. becomes truly impressive. The lion's share of this diversity is found in the southeastern drainages of the Ohio, Tennessee, Cumberland and Mobile rivers. One of the most diverse drainages, the Tennessee River Basin contains 102 species nearly one-third of the country's fauna! Virginia becomes a part of the equation because the headwaters are within the southwestern region of the state. Virginia's portion of the Tennessee River drainage includes the Powell, Clinch and Forks of Holston (North, Middle and South) rivers. Within these rivers, there are over 45 mussel species, several of which are found nowhere else but the upper Tennessee drainage.

When settlers first arrived on these shores, they were astonished to discover river bottoms practically paved in freshwater mussels. Unfortunately, over the proceeding 400 years, water pollution, dams and in-

People have a long history of benefiting from freshwater mussels. Before the advent of plastics, freshwater mussels were commercially harvested to make buttons. Today, they are legally collected in other states for the cultured pearl industry. Photo by Dwight Dyke.

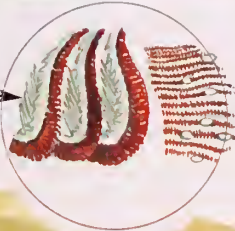
roduction of exotic organisms has taken its toll on many species. It is estimated that 70 percent of the mussel fauna in the U.S. is in peril. Over seven percent have gone extinct, and another 50 percent are receiving special protection under the U.S. Endangered Species Act. The situation does not get much better for Virginia. Of the 81 species in the Commonwealth, only 30 percent are considered stable with the remaining in decline. In Virginia's Tennessee drainage, 31 species are listed as either state or federally threatened and endangered. Certain species are so rare that completion of the life cycle is unlikely to occur under natural conditions. In fact, there are so many rare mussels in southwestern Virginia that it is illegal to collect any mussel species whether or not it is live, dead, common or endangered.

Alarmed by the decline of an entire group of animals, biologists realized that freshwater mussels needed urgent measures to recover their numbers. However, it was just as quickly realized that any effort to recover them was hampered by the lack of even the most basic biological and ecological information. In order to fill this void, Dr. Richard Neves has committed himself to discover-

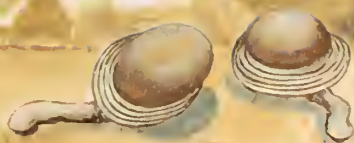
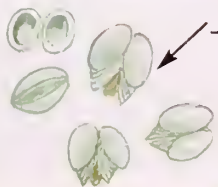
fish host



Glochidia on gills



Juvenile





## 1000 Species of

## Freshwater Mussel Worldwide



Above: Of the estimated 1,000 species of freshwater mussels found worldwide, an astonishing 297 species are historically identified to live here in the United States.

ing the secret lives of these unique animals for the past 25 years. Through funding provided in part by the Virginia Department of Game and Inland Fisheries, Dr. Neves and his students at Virginia Tech have investigated species status, host fishes, habitat use, genetics, diets, water quality requirements, reproductive strategies, and other topics too numerous to mention. The culmination of this research has led to the development of techniques to cultivate many mussel species. Through dedication and hard work, there is now hope that species on the brink of extinction can be captively-propagated to recover populations in the wild.

The cultivation of freshwater mussels allows biologists to increase the chances of survival at each step of their life cycle. The process begins with checking glochidia viability. A few glochidia are removed from the gill of a female mussel and salt grains, used to simulate the chloride found in fish blood, are placed alongside the larvae in a small water dish. Mature or viable glochidia rapidly close, while immature glochidia will react slowly or not at all. If the glochidia are determined to be vi-

Below: Fish are placed in a confined aerated container and glochidia are added. Fish are then examined to determine the proper level of infestation. Right: White specs representing hundreds of individual glochidia are attached to the gills of a smallmouth bass. Each glochidium will soon encyst into the gill tissues and begin changing into a juvenile mussel. Glochidia, no bigger than the period on the end of this sentence, live for a short time with the sole purpose to attach to a host fish.



able, several 100s to 1000s are removed from the female and placed into an aerated bucket containing the known host fish. Under natural conditions, the number of glochidia that infest a fish is so low that it

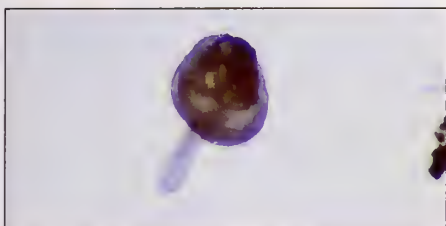
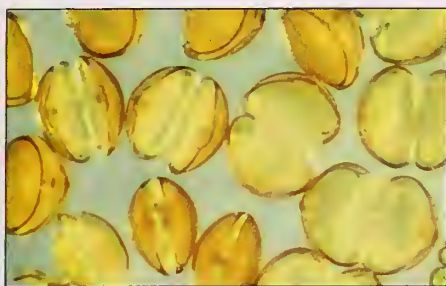


Above: Glochidia are gently removed from the female mussel. Photos by Michael Pinder.



rarely causes damage to its host; however, care must be taken in the laboratory to avoid over infestation, which can cause the fish undue stress or death. Fish are infested over a short period and checked to deter-





Top: Glochidia, young mussel larvae. Above: A week-old, juvenile mussel after dropping off the host fish to feed brings in food particles by moving its ciliated foot through the water. Photos by Michael Pinder.

pond, which increases algae and temperature, both necessary components for mussel survival and good health. Currently, over 300 adult mussels representing 22 species are held at the AWCC. We also hold an assortment of fish, from bass, darters and minnows, which serve as hosts for many mussel species. Because of the facility's river-like conditions, mussels spawn and produce viable glochidia as they would in the wild. In turn, these glochidia are used to infest host fishes and cultivate young mussels. Thousands of juvenile mussels ranging in ages from one month to five years old have been cultivated at the AWCC.

The second step in freshwater mussel recovery is determining where to release propagated species. In partnership with government, business and the public, six target reaches were developed to augment mussel populations in the Tennessee drainage of Virginia. These reaches were selected because they still have good species diversity and water quality. Within each reach, a monitoring site was selected to gauge suc-



Above: Adult mussels held at the Aquatic Wildlife Conservation Center maintain their position in gravel and pebble in the bottom of the facility raceway. Below: The Aquatic Wildlife Conservation Center, established in 1998, is used to cultivate and recover freshwater mussels of the upper Tennessee River drainage. Photos by Michael Pinder.

mine the degree of infestation. After the procedure is complete, the fish are transferred to tanks, which are carefully inspected over the next two weeks for juvenile mussels. While these techniques are known for a few species, many more require additional research before laboratory cultivation is possible.

Because of mussel cultivation advances and water quality improvements in many waterways, the Department initiated a program to reverse the decline and actively recover Virginia's freshwater mussels. The first step in accomplishing this task was creating the Aquatic Wildlife Conservation Center (AWCC), a facility located at the Department's Buller Fish Cultural Station near Marion, Virginia. Established in 1998, the AWCC is used to hold, propagate and grow mussels. Adult mussels at the facility are housed in a long raceway that contains a mix of gravel and pebble similar to that found on the stream bottom. The purpose of the stone is to act as a substrate so mussels can burrow, feed and respire naturally. Before entering the raceway, water from the South Fork Holston River passes through a one-quarter acre



cess and develop a baseline of our overall recovery efforts. The monitoring sites are then sampled to determine the diversity and abundance of the mussel fauna. To date, three sites have been surveyed with

many more planned in the future. Using mussels from the AWCC and Virginia Tech, the Department began its first release of propagated mussels on August 28, 2001, into the Clinch River. By introducing propa-



Labside • Cracking pearlymussel • James spingymussel • Wavyrayed lampmussel • A

Littlewing pearlymussel • Cumberlandian combshell • Applachian monkeyface • Purple bean • Elephant ear •

Jewelfe floater • Atlantic spike • Taper ponasshell • Sneepnose • Longsoma • Suppersomen mussel •



Above: As part of its monitoring program, the Virginia Department of Game and Inland Fisheries in partnership with the U.S. Fish and Wildlife Service, The Nature Conservancy, Virginia Tech and other private, public and governmental organizations assist in monitoring mussels on the Clinch River. While snorkeling, biologists place a flag next to each live mussel on the river bottom. Photo by Michael Pinder.

gated mussels on an annual basis, it is hoped that the additional numbers will help increase and eventually produce self-sustaining populations of endangered species.

Just as China is expected to protect its pandas or India its tigers, the United States has a responsibility to protect its wildlife resources, be it bald eagles, grizzly bears or fresh-

water mussels. By actively working for their recovery, Virginia is one of only a few states doing its part to fulfill an obligation for future generations. With continued support and dedication, citizens can be assured that their freshwater heritage will once again regain its natural prominence in the rivers and streams of the Old Dominion. □

*Mike Pinder is a regional wildlife biologist with the Virginia Department of Game and Inland Fisheries' Wildlife Diversity Division.*



Above: Mussels raised in captivity are marked with a small plastic tag before being released into the wild. After a year in the Clinch River, they have shown high survival and good growth. Virginia is working hard to recover its diversity of freshwater mussels for future generations. Photo by Michael Pinder.



Eastern pondmussel • Notched rainbow • Slabside pearlymussel • Fausshell •



# Potomac River Smallmouth

## WANTED!

The Potomac River Fishing Club is looking for new members who like to fish, have fun and, most importantly, willing to volunteer time to help the environment.

story & photos  
by King Montgomery

In 1988 a small group of avid Virginia smallmouth bass anglers formed a club dedicated to the smallmouth bass. The Potomac River Smallmouth Club (PRSC) grew to nearly 200 members and its goals today are the same as in the beginning: the conservation of this wonderful sport fish and its ever-threatened habitat. Oh, and a little fishing for the smallies now and then just so the members can keep an eye on things.





Most bass fishing clubs are oriented to the pursuit of the smallmouth's bigger cousin, the largemouth bass. As Bass Anglers Sportsman Society (B.A.S.S.) clubs proliferated and their members darted around in high-powered bass boats, the smallmouth chasers quietly waded, paddled or drifted Virginia's smallmouth rivers such as the upper reaches of the Potomac, Shenandoah, Rappahannock, James and New rivers.

The smallmouth lovers didn't have an organization until the PRSC took hold, but by the early 1990s it became a force to be reckoned with in the realm of bass angling, management and conservation. Here at last was a venue for smallmouth anglers to meet others from all walks of life with common interests and beliefs, and it gave the smallmouth bass a dedicated advocate in fisheries management circles in Virginia, the District of Columbia and Maryland.

## Conservation

Although the Potomac River Smallmouth Club is mostly a recreational angling organization, conservation of the fish and its habitat is a high priority. Sometimes, such as during the annual scale sampling trip on the upper Potomac River, both angling and conservation efforts go hand in hand.

The late summer "scaling trip" is part fishing, part conservation, and all fun. Last August I joined the club on a float from Whites Ferry to Edwards Ferry on the Maryland side just across from Virginia's Loudoun County. The drought that has persisted since at least 1999 continued; the water was low, running slowly, and the thick water-stargrass hindered navigation in the shallows, but provided cover to fish and other aquatic creatures. Each smallmouth bass over 8 inches long was measured and several scales removed from along the lateral line area on the side of the fish, and placed in a small envelope. Other data such as length and area of river captured was recorded on the envelope. At day's



Previous page: Ron Marafioti, conservation chair with the Potomac River Smallmouth Club, shows us a favorite smallmouth food, a damselfly that became attracted to his hat. Above: Members of PRSC gather to assist fisheries biologists with collecting scale samples from smallmouth bass. Right: The scales collected from smallmouth bass will help biologists determine age and relative growth of the fish.

end, PRSC Conservation Chair Ron Marafioti collected the envelopes and sent them to the Maryland Department of Natural Resources fisheries biologist in charge of the Potomac's fishery.

The data gleaned from the scale sampling—age, relative health, and other information—helps in producing fisheries management plans for





the upper Potomac River that forms the border between Virginia and Maryland. The information gathered is shared with the PRSC and the Virginia Department of Game and Inland Fisheries biologists who manage Virginia's smallmouth bass populations. In this cooperative effort between natural resource users and managers, everyone wins.

During the year, the PRSC sponsors or participates in several major river cleanup days at places along the Potomac River such as Riverbend Park, Turkey Run, and at the Chain Bridge near McLean where the river narrows into a rocky gorge. Members collect piles of trash and junk, particularly plastic stuff that

takes millennia to biodegrade. Some of the more esoteric items collected included a toilet, a child's car seat, and a manhole cover!

Since the PRSC is a registered not-for-profit organization, it doesn't keep the funds it collects during the year from dues, raffles and other contributions. Rather, it puts the money to work by donating to conservation-minded citizens' groups that keep watchful eyes on our rivers. It contributes to the Friends of the Rappahannock, the Friends of the North Fork of the Shenandoah, the Friends of the Shenandoah, the Cacapon Institute and others. These groups are dedicated to the wise use of our rivers and streams and are ever on the lookout for agricultural, sewage, and industrial pollution and degradation of the riparian and aquatic zones.

The PRSC is joining the Potomac Conservancy in a river-monitoring program that helps ensure the Potomac is free from farm, industrial, and urban runoff and waste-over-

Jeff Kelble, president of PRSC holds a nice Potomac River smallmouth for his wife, Erica, before releasing it. Below: PRSC member Terry Cooney with a 19-inch smallmouth, the largest taken on the annual fish scale sampling trip. The fish hit a plastic Senko tube bait.

flows that pollute the land and water. The program monitors the levels of good and bad chemicals in the water, and it conducts periodic water sampling to see how the macroinvertebrates, the smallest animals in the system's food chain, are fairing; they are indicators of stream health.

Conservation guru Marafioti tells fellow PRSC members they should volunteer for these worthy programs because not only is it the right thing to do, but "The basic rule is that the cleaner our waters are, and the more life forms that are supported, the more healthy fish there will be to catch." Ron gets a lot of volunteers that way, mostly because he is absolutely right.

## Catch-and-Release

The Potomac River Smallmouth Club members practice catch-and-release. That's not a club rule or anything; it's just the way it is. In the mid-1990s, the club lobbied the Maryland DNR—Maryland manages the upper Potomac River fisheries—for a "no-kill" zone from the mouth of the Monocacy River to Edwards Ferry across from Leesburg. The biologists did some studies and determined a catch-and-release area was a sound fisheries



## Interested in Joining?

Anyone is welcome to join the PRSC. Annual dues are \$25 and meetings are held at the Vienna Fire Station, 400 S. Center Street, Vienna, Va., on the last Wednesday of each month. If you have questions or wish to join, visit and fill out the form on the Web site at <https://www.prsc.org>. Or call President Jeff Kelble at 703-243-5389, VP Jim Tergis 703-494-1926, Secretary George Burgin 703-978-9161 or Treasurer Tim Freese 703-443-9052.

For guided fishing trips contact Mark Kovach at 301-588-8742.



lease area was a sound fisheries management option for the area. The regulation is still in effect today.

The PRSC has a member fishing contest, but no fish are placed in live-wells and transported to distant weigh-in sites. An angler simply measures the smallmouth with a witness present, immediately releases the fish, and reports the catch via phone or email to the contest director. At the end of the year, the contest is decided by adding up an angler's top five lengths and the highest length for a single fish. The longest fish wins the big fish award, and the longest aggregate length wins that category. There is also a fly rod division for the club's fly fishers.



## And Fishing Too!

Lest it appear that PRSC activities are mostly about environmental and conservation issues, I assure you they do a lot of fishing too. The club sponsors monthly trips to Virginia's smallmouth waters from the Potomac to the New, and occasionally to Pennsylvania's Susquehanna River, fabled for its smallmouth bass fishery.

New and older members, a diverse group from a cross section of our population, get together to learn new waters and to exchange ideas on tackle, tactics and techniques. Even professional fishing guides such as Jeff Kelble, Tim Freese and

Mark Kovach freely provide instruction, and give information on river conditions and other angling tips to members. A good source of information on the PRSC and the great fishing to be had is found in the members' newsletter the "Buzz," and online at <https://www.prsc.org>.

A few weeks ago I was sharing a comfortable raft, floating on the main stem of the Shenandoah River near Berryville, with Jeff and Erika Kelble, two fine anglers and people who embody the spirit of the Potomac River Smallmouth Club. Virginia bluebells and other early wildflowers lined the banks. Waterfowl and songbirds were everywhere. And the sun played hide-and-seek



with the clouds. I asked Jeff to drop me on shore so I could take some photos of the raft with a foreground of bluebells. I told Erika to cast her spinning rod and catch a fish for the pictures. No sooner had I clicked a few shots than Erika's rod swept back in a vigorous hookset, and a 2¼-pound smallmouth soon came to net. We were all delighted, including the fish that was promptly released to the cool waters.

We drifted, talked and fished. Jeff outlined some of the many accomplishments of the PRSC, and listed some projects under consideration. Erika related how much she enjoyed the club and its friendly members. She wished even more women would join. The women members

are some of the most active in the organization. We drifted against a downed tree. I asked Jeff to drop the oars and fish so I could get some shots of the two of them casting. The water looked very fishy and after only a few casts, Jeff set the hook in a smallmouth that weighed 3¾ pounds. Another super picture fish!

As we neared the take out point under the Highway 7 bridge east of Berryville, Jeff spotted a large, brightly-colored float tube impaled on a fallen tree near the far bank. He rowed over, cut the tube free from the snag, and placed it in the boat. He said he and his fishing clients often load up on flotsam and other trash that blight our rivers. Other

PRSC members do the same when they go fishing; most carry plastic bags to haul away some of the garbage left by some sloppy and inconsiderate people.

I was impressed by Jeff's concern for the river and by his actions, however small in the larger scheme of things, which seem to codify the behavior of the membership of the Potomac River Smallmouth Club. They love to fish for smallmouth bass, they like associating with others who share that love and they are concerned about the environment. This is just a nice bunch of people. □

*King Montgomery is a freelance outdoor writer and photographer from Burke. He has been a bass angler for almost 5 decades!*



# Team Effort Aids Endangered Woodpeckers

by Curtis Badger  
photos by Dwight Dyke

**A special relocation program of the red-cockaded woodpecker is underway in Virginia and, "knock-on-wood," it could help restore their dwindling numbers.**

**I**t was just before dawn, with a purple sky quickly fading to magenta. Thirty feet up in a large pine tree sat a red-cockaded woodpecker, trapped by a wire screen in his nesting cavity, tapping impatiently at the opening. From below, we could see movement, a head bobbing up and down. At exactly four minutes after seven, we knew the time had come.

Brian van Eerden yanked a yellow cord and the wire screen tore free from the pine. The woodpecker took off like a missile, whistling loudly, if a bit off key. Fifty yards away, Don Schwab yanked another yellow cord, and a second woodpecker took flight. The birds did not fly far, which was good. Van Eerden and Schwab were acting as matchmakers. They wanted these woodpeckers to get to know each other.

On a recent morning, six red-cockaded woodpeckers were released in a remote pine woods near the town of Wakefield in southeast Virginia. On that morning, Virginia's population of this endangered bird rose by 25 percent.





Wildlife biologists with the Virginia Department of Game and Inland Fisheries, U.S. Fish and Wildlife Service, The Nature Conservancy, and the Center for Conservation Biology at the College of William and Mary prepare to relocate a red-cockaded woodpecker in a forest preserve near Wakefield, Virginia.

In the time of John James Audubon, red-cockaded woodpeckers were common in the southeastern United States, ranging from New Jersey to Virginia and the Carolinas to Florida and Texas. But these woodpeckers depend upon old growth pine forests for survival, and by the mid-1900s this habitat had been reduced by more than 95 percent. The bird went on the endangered species list in 1970, and in Virginia fewer than 20 individuals survived. Like the larger ivory-billed woodpecker, the little red-cockaded seemed headed for extinction.

But that might not happen just yet. Through an extraordinary cooperative effort involving federal and state wildlife agencies, conservation organizations and private landowners, the red-cockaded woodpecker is being reintroduced, and more important, habitat is being managed in

ways that may ensure the long term survival of the bird.

The relocation project this past fall involved a broad range of conservation interests. South Carolina has a stable population of red-cockaded woodpeckers, so the six birds were trapped at Sandhills National Wildlife Refuge by Don Schwab, of the Virginia Department of Game and Inland Fisheries, and Bryan Watts, of the Center for Conservation Biology (CCB) at the College of William and Mary. They were taken to Piney Grove, a forest preserve of about 2,700 acres near Wakefield owned by The Nature Conservancy. Staging area for the project was the Waid's Corner Hunt Club, a Piney Grove neighbor.

"It was a team effort," said Brian van Eerden, stewardship ecologist with the Conservancy. "Fish and Wildlife had the birds, the Department of Game and Inland Fisheries had the method, Center for Conservation Biology had the expertise, and the Conservancy had the land. Hopefully, we can come back in a year and find that the birds have created families and are raising another generation of young."

The Conservancy had red-cockaded woodpeckers in mind when it bought Piney Grove preserve from Hancock Timber Resource Group in 1998. The site had plenty of large pines, extensive forested areas, and Virginia's remaining population of nesting red-cockaded woodpeckers. Van Eerden said the Conservancy began managing the land for woodpeckers by selectively burning underbrush, removing hardwoods, and thinning midstory growth.

The relocation project involved more than simply trapping birds and moving them a few hundred miles to a new home. Although red-cockaded woodpeckers were using the tract and had built clusters of nesting cavities, additional cavities were needed for the new birds. So van Eerden and his team built boxes of cedar and then inserted them in pine trees 20 to 30 feet off the ground. Holes were cut in the pines with a chainsaw, the boxes were inserted and cemented in place with epoxy, and in the end they were nearly identical to a cavity actually built by a bird.

The birds were captured late in the evening in South Carolina after







Above: In Virginia fewer than 20 red-cockaded woodpeckers are known to be living. With the help of South Carolina, which has a stable population, six birds were trapped and relocated to an area in Virginia, which is owned by the Nature Conservancy.



they had gone to roost. They were fed live crickets hourly through the next day, and on the second evening they were released into their new homes and were kept overnight in the cavities by wire screens covering the opening.

"These birds are very social, they live in groups, so the idea was to release all of them at the same time early in the morning, when they normally would begin their day of foraging," said van Eerden. "Hopefully, they'll interact with each other and with native birds and form a colony."

As scientists have studied these endangered birds, they have learned more and more about the complex social interaction of red-cockaded woodpeckers. Groups of birds live in clusters of nesting trees within a circle about 1500 feet in diameter. The red-cockaded is the only woodpecker to build its cavity in live pine trees. It prefers trees that are 60 to 70 years or older, and the cavity is excavated in the heartwood. Heartwood is usually very hard, so the birds look for trees that have a heartwood fungus called red heart, which weakens this non-living fiber.

Around the cavity the birds chip away small holes called resin wells, and the sap from these holes coats the tree and protects the cavity from predators such as rat snakes. Older cavity trees will have large areas that are white with resin.

Red-cockaded woodpeckers are what scientists call "cooperative breeders" in that the entire family helps raise the young. A family group consists of a breeding male and female, as well as several males from previous breeding seasons. These "helper" males incubate eggs, feed the young, construct new cavities and help defend the group's territory. At the death of the breeding male, a younger male will usually

With a major team effort and a lot of helping hands, it's hoped that the red-cockaded woodpecker will once again take flight in greater numbers and grace the eastern forests of southern pine in Virginia.



Red-cockaded woodpeckers prefer to build their nests in very old, living pine trees.

take over that role. Young females usually leave the nest to begin family groups of their own.

"We are managing Piney Grove for red-cockaded woodpeckers, but in reality this is management on a broader scale," said van Eerden. "The Conservancy's larger goal is conservation of the southern pine forest ecosystem, to which the woodpeckers are closely linked. Working on woodpecker recovery at Piney Grove engages the organization in fire and timber management, issues that influence biodiversity across the entire southeast. The woodpecker is a keystone species, a barometer of how well we are managing our land. The issue is not simply endangered birds, but diversity and a healthy ecosystem." □

*Curtis Badger is a freelance outdoor writer and photographer who lives on Virginia's Eastern Shore. He has authored numerous books. The most recent being, Virginia's Wild Side-50 Outdoor Adventures from the Mountains to the Ocean, published by University of Virginia Press and available at local bookstores.*





# Journal

## VDGIF 2003 Calendar of Events

**August 2-3:** *The Mother and Daughter Outdoors*, Holiday Lake 4-H Educational Center, Appomattox, Va. For information call (804) 367-1147.

**September 7-10:** *Decoy Carving Workshop*, Holiday Lake 4-H Educational Center, Appomattox, VA. Learn how to carve your own decoy, carving experience not needed. Tools, materials and instruction will be provided. For information call: (434) 248-5444 or [www.ext.vt.edu/resources/4h/holiday/adultprograms.html](http://www.ext.vt.edu/resources/4h/holiday/adultprograms.html).

**September 13-14:** *The Virginia Outdoors Weekend*, Westmoreland State Park, Montross, Va. For information call (804) 367-1147. □

### Book Review by Marika Byrd

*Blue Crabs: Catch 'em,  
Cook 'em, Eat 'em*

Dr. Peter Meyer  
Published by Avian-Cetacean Press  
P. O. Box 15643, Wilmington,  
NC 28408  
128 pp, \$13.95 + S&H  
ISBN: 0-9628186-3-1

The only time I tried to clean and pick crabs I had no idea what I was doing. So, I left the cleaning and picking to the others and ate the rewards of their labor. The Blue Crab would have taught me much about the proper manner to manage this delicacy back 15 years ago. It is written in lay terms and easily understandable for even a reading youngster. The author's photographs (in-

cluding his two sons in their younger years), drawings and labels clearly gives you visual insight into the process of cleaning and picking crabs.

Catch 'em gives you the times, seasons and the handling and storing of crabs. The Cook 'em gives details for picking, freezing and preparing crab meat. Eat 'em includes 26 recipes for the various ways to consume crab: appetizer, main meal, soups, Cajun and Mexican.

Meyer writes about the categories of the arthropods, their anatomy and life cycle, and a chapter on soft-shell crabs. Information in the book includes recommended reading and Web sites, state crabbing agencies, tricky crabby terminology as well as definitions and crab terms.

Meyer is an emergency room physician by occupation who takes his fishing avocation seriously. The two worked well when he wrote this book as his descriptions, photographs and drawings on the anatomy really helps to make what he is saying crystal clear.

Throughout the book he includes input from his two sons and photographs as a way of encouraging youngsters to learn this wonderful experience within their environment. He uses the old saying: Give a man a fish, and you feed him for a day; teach him how to catch fish, and you feed him for a lifetime to equally apply to crabbing.

July is prime time for crabbing in Virginia. Set aside some time, make dates with a youngster or friend, get your pots ready and head to the waters of the Chesapeake Bay and Atlantic Ocean, for some bonding experiences that will last a lifetime. □



How's this for a 5th birthday gift. Eve Redifer, from Churchville, is all smiles with her fine stringer of trout caught this past spring in Elkhorn Lake, located in the George Washington and Jefferson National Forest. The lake is stocked with trout October through May and offers wonderful angling opportunities for children and older adults. During the warmer months visitors to Elkhorn Lake will find a great largemouth bass and panfish fishery. Thanks to Eve's grandparents Ron and Gloria Craig, longtime subscribers to *Virginia Wildlife*, for sending us the photograph.

### New Habitat Newsletter by Marlene Condon

As a nature writer, photographer and speaker, I have been inundated with questions about our natural world. So, for several years I have entertained the idea of producing my own nature newsletter to help people to understand nature and how to live in harmony with it.

Unfortunately, due to the time constraints and more than enough



work to do, I have never been able to act upon my idea. But now I am moving forward with this project and I am putting together a mailing list.

You will receive the introductory issue for free, along with information and cost for a one-year subscription. *The Happy Habitat* newsletter will be about wildlife; wild and cultivated flowers, shrubs, and trees; gardening with, as well as for wildlife; interactions between wildlife and the plants they depend on for survival; and cooking and preserving tips to get the most out of your garden. If you want your yard to function properly and you want to enjoy a nature wonderland—as I do—you will find the information you need to accomplish this goal in *The Happy Habitat*.

If you would like to be placed on the mailing list to receive a copy of this unique nature newsletter (due out this summer), or to subscribe send your printed or typed name, phone number, and complete address to *The Happy Habitat*—Dept. VW, P. O. Box 235, White Hall, VA 22987-0235. □

## Up a Tree in a PWC

by Jennifer Worrell

Game Warden Harrison Jamison had an eye-opening experience while training to use Department watercraft when he was a new recruit. As he admits, game wardens are a rather competitive lot, and this spirit leads to hair-raising ends when one is operating a powerful personal watercraft (PWC).

The initial stages of PWC training went smoothly. The instructors had paired the recruits to complete a timed obstacle course around a series of buoys placed at somewhat precarious angles. This would allow future officers to safely practice maneuvers used in pursuits situations. Officer Jamison had the interesting luck to sit behind this writer's husband, Tim Worrell, through the challenging course. Their first few turns through the course proved successful, and both wardens wished to im-

prove their time. Jamison hung on as his partner careened through the first few buoys, besting their previous times. After the third buoy, Jamison realized they would not make the fourth, as the PWC slipped from his partner's control and headed for the tree-laden shoreline. Much to his chagrin, Worrell let off the throttle in hopes of regaining the helm. Experienced riders know that without quick forward momentum, a PWC develops a mind of its own. With all hopes of salvaging control lost, the two men just hung on as the doomed craft headed for a downed tree, slid up the trunk, and came to rest between two branches. Both men and the PWC emerged from the brush unscathed. Jamison is proud to say that to his knowledge, this maneuver has never been repeated before or since. The officers are on their way to going down, or rather, "up" in Department training history. □

## Mason Dixon Outdoor Writers Name Winners

by Marika Byrd

*Virginia Wildlife* magazine continues to use, and its readers get to peruse, works from award-winning artisans. The same is true this year. After winning accolades at the Virginia Outdoor Writers Association, Inc., annual meeting, King Montgomery, Dan Genest, and Spike Knuth went on to be award recipients in the Mason-Dixon Outdoor Writers, Inc. (M-DOW) annual excellence in craft competition recently held in Annapolis, MD. Mason-Dixon Outdoor Writers is a regional professional group of writers, photographers, artists, and others connected with the outdoors.

The second place winner for the Wheeler Johnson Award—Best Newspaper Column went to Dan Genest (Richmond, Va.), for "It's My Fish, Damn it," that appeared in the *Virginia Sportsman*.

Recognition for first place went to King Montgomery (Burke, Va.) for the Best Magazine or Regional Newspaper Column entitled

"Along the River," in the *Warm Water Journal*.

In the category Best Magazine or Regional Newspaper Feature, King again took first place for "Michelle Micropterus and a Miracle," in the *Southern Anglers' Journal*.

King walked away with another first place for the Best Pictorial Essay for "Spring Restores the Tone," that appeared in the *Southern Anglers' Journal*.

Finally, King's largemouth bass photograph in the *Southern Angler's Journal* won first in the Pete Greer Award for Best Color Photo.

This magazine's own resident artist, Spike Knuth, received the Rotating Award for Best Published Art: for his original painting "A Shocking Stream," which appeared in *Virginia Wildlife*.

We appreciate Sam Blate, M-DOWA Awards Chair, for providing the information on our worthy recipients.

What better reason for subscribing to *Virginia Wildlife* magazine than to read such fine articles from award-winning artisans like those acknowledged above. All three are members of the Virginia Outdoor Writers Association and some belong to the Outdoor Writers Association, a national organization associated with the outdoors and sporting world. □



"They like to display their lures in a realistic setting."



# RECIPES

by Joan Cone

## You Can't Go Wrong With Catfish

In addition to bullheads, four much larger catfish species are common in Virginia. Depending on where you go, you may encounter channel, blue, flathead or white catfish. All are enjoyed by everyone.

Catfish, including bullheads, should be skinned before cooking. Big ones can be filleted or steaked. Both wild and farm-raised cats offer mild flavor and firm texture. Most Virginia supermarkets sell fresh, farm-raised catfish fillets.

### Menu

*Shrimp And Snow Pea Hors D'oeuvres*  
*Fish Tortillas*  
*Chilled Green Beans Parmesan*  
*Summer Plum Cake*

### Shrimp and Snow Pea Hors D'oeuvres

16 snow peas  
2 teaspoons vegetable oil  
1 teaspoon crushed garlic  
1 tablespoon chopped fresh parsley  
16 medium shrimp, peeled  
deveined, tail left on

Steam or microwave snow peas until barely tender-crisp. Rinse with cold water. Drain and set aside. In nonstick skillet, heat oil. Sauté garlic, parsley and shrimp just until shrimp turn pink, 3 to 5 minutes. Wrap each snow pea around shrimp and fasten with a toothpick. Serve warm or cold. Makes 16 hors d'oeuvres.

### Fish Tortillas

1 pound fresh or frozen skinless catfish fillets or other mild fish fillets  
2 tablespoons butter or margarine, melted

2 teaspoons chicken flavored bouillon granules  
¼ teaspoon ground cumin  
Garlic powder to taste  
2 tablespoons mayonnaise  
2 tablespoons sour cream  
1 teaspoon lime juice  
1½ cups shredded coleslaw mix  
6 (6-inch) flour tortillas, warmed

Preheat oven to 450° F. Thaw fish fillets if frozen. Rinse fish and pat dry with paper towels. Cut fish fillets crosswise into 1-inch slices. Place fish in single layer in a greased shallow pan. Combine butter, bouillon, cumin and garlic powder. Brush over fish. Bake for 4-6 minutes or until fish flakes easily when pierced with a fork.

Meanwhile, combine mayonnaise, sour cream and lime juice. Add coleslaw mix and toss to coat. Spoon coleslaw mixture onto each warm tortilla. Top with fish. If desired, serve with salsa. Makes 6 servings.

### Chilled Green Beans Parmesan

1½ pounds fresh green beans, trimmed and cut in 2-inch pieces  
3 tablespoons olive or vegetable oil  
Grated peel of ½ lemon  
Juice of 1 lemon  
1 medium onion, cut in thin wedges, optional  
1 jar (4 ounces) sliced pimientos, drained  
Garlic salt to taste  
Pepper to taste  
Fresh grated Parmesan cheese

In a large saucepan, cover beans with 2 inches of water and bring to boil. Reduce heat and briskly sim-

mer, uncovered, for 15 to 20 minutes or until just tender. Rinse and cool with cold water; drain well. Meanwhile, in large bowl, combine oil, lemon peel and juice, onion, pimiento, garlic salt and pepper. Add well-drained cooked beans. Chill, stirring occasionally. To serve, sprinkle with Parmesan cheese. Makes 6 servings.

### Summer Plum Cake

1¼ cups flour  
1 teaspoon baking powder  
¼ teaspoon salt  
½ cup (1 stick) unsalted butter, room temperature  
¾ cup plus 1½ tablespoons sugar  
2 large eggs  
1 tablespoon fresh lemon juice  
1 teaspoon grated lemon peel  
5 large plums (about 1¼ pounds), pitted, cut into ½-inch wedges  
¼ teaspoon ground cinnamon

Preheat oven to 350° F. Butter a 9-inch springform pan. Whisk first 3 ingredients in small bowl to blend. Using electric mixer, beat butter in large bowl until fluffy. Beat in ¾ cup sugar. Add eggs, 1 at a time, then lemon juice and lemon peel, beating until blended after each addition. Beat in flour mixture. Spread batter in prepared pan. Press plum wedges halfway into batter in concentric circles, spacing slightly apart. Mix remaining 1½ tablespoons sugar and cinnamon in small bowl and sprinkle over plums. Bake until cake is browned on top and tester inserted into center comes out clean, about 50 minutes. Serve cake warm or at room temperature. Makes 6 to 8 servings. □





# On The Water

by Jim Crosby

## Boat Therapy

Great news for boaters—boating helps keep you happier and healthier. It even helps control your weight. This is great justification for that hole in the water into which we are all pouring our money.

The National Marine Manufacturers Association (NMMA) is always looking for ways to encourage more people to buy and use their member's products. In pursuit of this goal, they contracted with Impulse Research Corporation to conduct a survey of a random sample of 1,029 men and women selected to closely match U.S. population demographics.

The survey found the following:

1. More boat owners said their health is excellent as compared to non-boat owners.

2. The large majority of boat owners said having a boat contributed to their well-being.

3. Boat owners experience greater self-esteem, ability to enjoy life and a better relationship.

4. Non-boat owners are more prone to feeling useless, lonely, unhappy and fatigued.

5. Nearly two-thirds of boat owners said owning a boat has brought their families closer together.

6. Most boat owners said the benefits of owning a boat include being outdoors, spending time on the water, being able to unwind and leave pressures behind and finding tranquility.

Needless to say, the NMMA is ecstatic over these revelations and have advised their members to make the most of them. Their advice is "Maybe this could serve as a conver-

sation starter in your safety outreach to boaters out there."

Balance all that against the muscle tone and weight loss that occurs naturally while boating and there is good reason for the consistent increase in boat ownership across the country.

Most people really get excited when you tell them that just being aboard a boat will tone their muscles and burn excess calories. Being on a boat is like walking or sitting on a balance beam. It requires constant muscle movement to counter the motion of the boat and maintain your equilibrium. It can also be compared to sitting in a rocking chair with the major difference being the changing scenery as you move around on the water. Everyone knows about the health benefits of the old rocking chair.

How many more reasons do you need to slip a little more money into the family's budget for boating? Sell

the treadmill, bicycle and barbells. Chuck the weight watchers program. Drop the Slim Fast from the food budget. Put it all into boating. After all, anything that pulls the family closer together and keeps them healthier and happier is worth all you can scrape together.

This might also explain why the following boat names made the top ten, most popular, list from BoatUS: Happy Hours, Lazy Daze, Obsession, Fantasea, Tranquilizer, Diversion, and a real favorite, My Therapy.

To insure keeping the family involved, I'm thinking of changing mine to Our Therapy. I have learned over the years that it is very important to keep the whole family involved in the whole boating thing.

May I also suggest you share this column with your family before making any changes in the family budget. You might get more support! □







story and illustration  
by Spike Knuth

# Naturally Wild



## Veery *Catharus fuscescens*



Without question the song of the veery is its most outstanding attribute. It has been described as being strange, eerie, and unearthly, a whistled prayer, and one of the sweetest sounds in the woodlands. Its song is clear and flute-like, resonating, yet soft and sometimes seemingly far away. Attempts to put it in words vary from "ta weel'ah—taweel'ah—twilah—twilah," or "veero-veero-veery-veery," with the last two phrases lower in tone and ending with a shivering note that trails off.

The veery is a thrush of about 7 inches long, related to the robin and bluebird. It is decidedly a summer bird in Virginia, breeding mainly in the mountain forests and hollows above 3,000 feet, amid mixed oak and pine with an under story of rhododendron.

It was originally known as the Wilson's thrush, named after pioneer ornithologist and bird artist, Alexander Wilson, who was later overshadowed by Audubon. It was also known as "nightingale" because of its song, and "tawny thrush" because of

its color. It is tawny brown in color above, whitish below with light tawny spots on a buffy breast. It is the least spotted of the other forest thrushes. Its flanks and cheeks are grayish-buffy, and its chin and throat are white.

Veerys arrive in the latter part of April and early May, often at night, and it is often a few days before they begin singing as if reluctant to announce their arrival. They nest on or near the ground on a mound of leaves or vegetation under a branch of a shrub or low in a shrub or small tree. Some have been known to nest in low tree cavities. The nests are constructed of leaves, moss, strips of bark and other vegetable fibers. They lay three to five greenish-blue eggs and may raise two broods in a season. The female is a tight sitter and is not easily flushed from her nest. The males protect the nest aggressively.

Veerys feed mainly on caterpillars, beetles, grubs, slugs, dragonflies and butterflies. They are capable of catching insects on the fly, but usually they run about in the forest humus scratching in the leaves. In late summer they add wild fruits and berries to their menu. They are shy and secretive but are curious and will often come out of hiding to investigate an intruder to their domain. August finds them on the move south, and by mid-September most are gone to their wintering grounds in Columbia, Brazil and British Guiana, passing through the Yucatan Peninsula of Mexico and Central America on the way. □



# Virginia Wildlife OUTDOOR CATALOG



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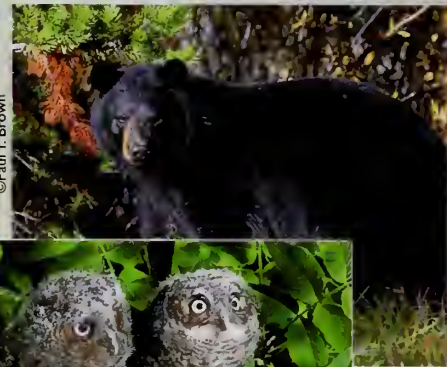


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2003-2004

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